Instruction Manual

HI 3854
Zinc Test Kit

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Dear Customer,

Thank you for choosing a Hanna Product.

Please read the instructions carefully before using the chemical test kit. It will provide you with the necessary information for correct use of the kit.

Remove the chemical test kit from the packing material and examine it carefully to make sure that no damage has occurred during shipping. If there is any noticeable damage, notify your Dealer or the nearest Hanna office immediately.

Each kit is supplied with:

- **HI 93731A-0** Reagent, packets (100 pcs);
- **HI 93731B-0** Zinc Reagent B (Cyclohexanone), 2 bottles (2 x 25 mL);
- 1 color comparator cube;
- 1 glass cuvet (10 mL) with HDPE plastic stopper;
- 1 syringe (1 mL);
- 1 calibrated plastic vessel (20 mL);
- 1 plastic spoon.

Note: Any damaged or defective item must be returned in its original packing materials.

ISTR3854 03/10

SPECIFICATIONS

Range	0 to 3.0 mg/L (ppm) as Zinc
Smallest Increment	0.6 ppm
Analysis Method	Colorimetric
Sample Size	20 mL
Number of Tests	100
Case Dimensions	230x59x70 mm (9.0x2.3x2.8")
Shipping Weight	250 g (8.8 oz.)

SIGNIFICANCE AND USE

Zinc is widely used in alloys (brass, bronze, and dye-casting alloys), in galvanizing iron and other metals, also as a fungicide. It is also an essential growth element in human diet. But with concentrations higher than 5 mg/L, it gives a bitter taste to water and opalescence to alkaline water. Zinc can enter the domestic water supply from the deterioration of galvanized iron and dezincification of brass.

Note: mg/L is equivalent to ppm (parts per million).

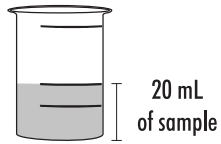
CHEMICAL REACTION

Zinc reacts with the zincon reagent to form a brownish-green to blue complex in a solution buffered at alkaline pH. Since other metals can form colored complexes with zincon, cyanide is added to complex zinc and any other heavy metal present. Then, cyclohexanone is added to selectively free zinc from its cyanide complex so that it can react with zincon to form the final blue colored product. The amount of color developed is proportional to the concentration of zinc present in the aqueous sample.

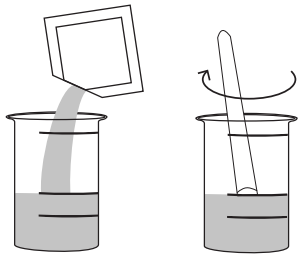
INSTRUCTIONS

READ THE ENTIRE INSTRUCTIONS BEFORE USING THE KIT

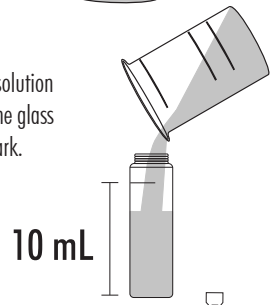
- Fill the plastic vessel with 20 mL of the sample, up to the mark.



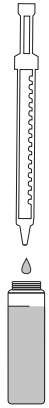
- Add 1 packet of reagent **HI 93731A-0** and mix, using the plastic spoon, until the powder is completely dissolved.



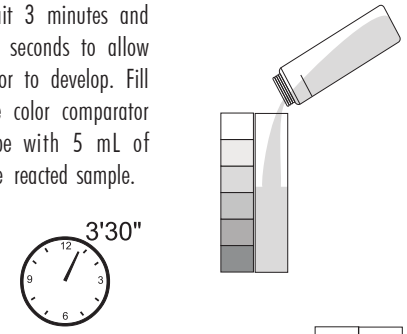
- Pour 10 mL of the solution from the vessel into the glass cuvet, up to the mark.



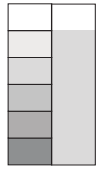
- Add 0.5 mL of **HI 93731B-0** reagent by means of the syringe. Close the cuvet with the HDPE plastic stopper and mix for 15 seconds.



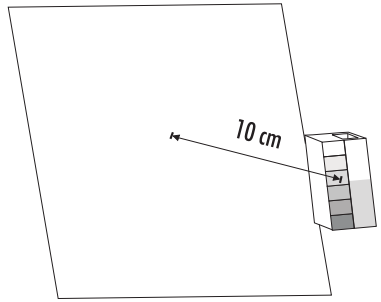
- Wait 3 minutes and 30 seconds to allow color to develop. Fill the color comparator cube with 5 mL of the reacted sample.



- Determine which color best matches the solution in the cube and record the result as mg/L (ppm) of zinc.



- It is better to match the color with a white sheet at about 10 cm behind the comparator.



REFERENCES

Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992
APHA/AWWA/WEF.

HEALTH AND SAFETY

The chemicals contained in this kit may be hazardous if improperly handled. Read Health and Safety Data Sheet before performing this test.